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Claims

[c1] 1. We claim a method of increasing muscle energy production, muscle respiration and performance in a mammal with the use of methyl pyruvate.

[c2] 2. We claim a method of increasing muscle energy production, muscle respiration and performance in a mammal with the use of methyl pyruvic acid.

[c3] 3. We claim a method of increasing methyl pyruvate levels and said effects in a mammal with the use of methyl pyruvate.

[c4] 4. We claim a method of increasing methyl pyruvic acid levels and said effects in a mammal with the use of methyl pyruvic acid.

[c5] 5. We claim the method of claim 2 wherein a therapeutic and effective amount of methyl pyruvic acid is infused or orally administered to the mammal.

[c6] 6. We claim the method of claim 1 wherein a therapeutic and effective amount of the salt of methyl pyruvate is infused or orally administered to the mammal.

[c7] 7. We claim the method of claim 6 wherein the salt of methyl pyruvate is a monovalent cation (such as sodium or potassium methyl pyruvate).

[c8] 8. We claim the method of claim 6 wherein the salt of methyl pyruvate is a divalent cation (such as calcium or magnesium methyl pyruvate).

[c9] 9. We claim the method of claim 6 wherein analogs of these compounds can act as substrates or substrate analogs for methyl pyruvate.

[c10] 10. We claim the method of claim 6 wherein the salt of methyl pyruvate and composition of a pharmacologically acceptable excipient and/or diluent therefor.

[c11] 11. We claim the method of claim 10 wherein the salt of methyl pyruvate and composition which further comprises vitamins, coenzymes, mineral substances, amino acids, herbs, creatine compounds and antioxidants.

[c12] 12. We claim the method of claim 10, orally administrable, in the form of a dietary supplement or energizer or pharmaceutical drug.

[c13] 13. We claim the method of claim 11, orally administrable, in the form of a dietary supplement or energizer or pharmaceutical drug.

[c14] 14. We claim the method of claim 12, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

[c15] 15. We claim the method of claim 13, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

[c16] 16. We claim the method of claim 14, in unit dosage form, comprising from about 100 mg to about 28 grams of at least one of the salts, preferably about between .5 gram and 5 grams.

[c17] 17. We claim the method of claim 15, in unit dosage form, comprising from about 100 mg to about 28 grams of at least one of the salts, preferably about between .5 gram and 5 grams.

[c18] 18. We claim the method of claim 16 which further comprises creatine compounds, which can be used in the present method include (1) creatine, creatine phosphate and analogs of these compounds which can act as substrates or substrate analogs for creatine kinase; (2) bisubstrate inhibitors of creatine kinase comprising covalently linked structural analogs of adenosine triphosphate (ATP) and creatine; (3) creatine analogs which can act as reversible or irreversible inhibitors of creatine ki-

nase; and (4) N-phosphorocreatine analogs bearing non-transferable moieties which mimic the N-phosphoryl group.

[c19] 19. We claim the method of claim 17 which further comprises creatine compounds, which can be used in the present method include (1) creatine, creatine phosphate and analogs of these compounds which can act as substrates or substrate analogs for creatine kinase; (2) bisubstrate inhibitors of creatine kinase comprising covalently linked structural analogs of adenosine triphosphate (ATP) and creatine; (3) creatine analogs which can act as reversible or irreversible inhibitors of creatine kinase; and (4) N-phosphorocreatine analogs bearing non-transferable moieties which mimic the N-phosphoryl group.

[c20] 20. We claim the method of claim 5 wherein analogs can act as substrates or substrate analogs for methyl pyruvic acid.

[c21] 21. We claim the method of claim 5 wherein methyl pyruvic acid and composition of a pharmacologically acceptable excipient and/or diluent therefor.

[c22] 22. We claim the method of claim 21 wherein methyl pyruvic acid and composition which further comprises

vitamins, coenzymes, mineral substances, amino acids, herbs, creatine compounds and antioxidants.

[c23] 23. We claim the method of claim 21, orally administrable, in the form of a dietary supplement or energizer or pharmaceutical drug.

[c24] 24. We claim the method of claim 22, orally administrable, in the form of a dietary supplement or energizer or pharmaceutical drug.

[c25] 25. We claim the method of claim 23, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

[c26] 26. We claim the method of claim 24, in the form of lozenges, tablets, pills, capsules, powders, granulates, sachets, syrups or vials.

[c27] 27. We claim the method of claim 25, in unit dosage form, comprising from about 100 mg to about 28 grams, preferably about between .5 gram and 5 grams.

[c28] 28. We claim the method of claim 26, in unit dosage form, comprising from about 100 mg to about 28 grams, preferably about between .5 gram and 5 grams.

[c29] 29. We claim the method of claim 27 which further comprises creatine compounds, which can be used in the

present method include (1) creatine, creatine phosphate and analogs of these compounds which can act as substrates or substrate analogs for creatine kinase; (2) bisubstrate inhibitors of creatine kinase comprising covalently linked structural analogs of adenosine triphosphate (ATP) and creatine; (3) creatine analogs which can act as reversible or irreversible inhibitors of creatine kinase; and (4) N-phosphorocreatine analogs bearing non-transferable moieties which mimic the N-phosphoryl group.

[c30] 30. We claim the method of claim 28 which further comprises creatine compounds, which can be used in the present method include (1) creatine, creatine phosphate and analogs of these compounds which can act as substrates or substrate analogs for creatine kinase; (2) bisubstrate inhibitors of creatine kinase comprising covalently linked structural analogs of adenosine triphosphate (ATP) and creatine; (3) creatine analogs which can act as reversible or irreversible inhibitors of creatine kinase; and (4) N-phosphorocreatine analogs bearing non-transferable moieties which mimic the N-phosphoryl group.